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Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

In the Matter of

Guidelines for Evaluating the  
Environmental Effects of  
Radiofrequency Radiation

ET Docket No. 93-62

TO: The Commission

**REPLY COMMENTS  
OF WAYNE OVERBECK,  
JOINED BY THE AMATEUR RADIO HEALTH GROUP**

Having filed timely comments in the above-captioned proceeding, I hereby reply to various comments filed by other parties regarding the Commission's proposal to adopt ANSI/IEEE C95.1-1992 as the electromagnetic radiation safety guideline for its licensees. The Amateur Radio Health Group joins in these reply comments.<sup>1</sup>

**I. INTRODUCTION**

Since this proceeding was initiated a year ago, there have been dozens of new studies of the health effects of low-level electromagnetic fields (EMFs) published in medical and other scholarly journals. This research encompasses both low-frequency fields and radiofrequency (RF) radiation. There is a growing body of evidence that EMFs affect living tissue in a variety of ways--even at athermal levels too weak to be regulated under the C95.1-1992 standard. While a physicist who is perhaps America's premier

1. I am a Professor of Communications at California State University, Fullerton, participating in this proceeding as an individual. I was formerly a staff member at the National Association of Broadcasters and an elected officer of the American Radio Relay League; I worked on electromagnetic radiation and health issues in both of those positions. The Amateur Radio Health Group is an informal organization of persons concerned about these issues. Organized by Stuart D. Cowan, W2LX, of Henniker, NH, this nationwide information-exchange network includes a number of medical doctors who have conducted laboratory and/or epidemiological research in areas relevant to this proceeding.

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naysayer concerning the health effects of low-level EMFs has published a new article challenging one possible mechanism for athermal effects,<sup>2</sup> the bulk of the new evidence is to the contrary. No less of an authority than the U.S. Environmental Protection Agency<sup>3</sup> has taken the position that C95.1-1992 is inadequate to protect public health in several important respects. The Commission should give great weight to EPA's conclusion that "There are serious flaws in the standard (C95.1-1992) that call into question whether the proposed use of 1992 ANSI-IEEE is sufficiently protective."<sup>4</sup>

Granted, virtually every major player with a financial stake in the outcome of this proceeding has filed comments that take issue with EPA's conclusions. In general, the numerous commenters representing FCC-licensed services have argued that the new ANSI standard is the most stringent standard the Commission ought to consider, and that the Commission should grant exceptions to the ANSI standard where compliance would be too "burdensome." But the Commission must consider public health as well as economic issues in this proceeding. The cost of compliance alone should not justify major compromises in the standards that licensed services must meet to safeguard public health.

Our original comments in this proceeding concentrated on its implications for the amateur radio service. While we will again address some of those issues, these reply

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2. See Adair, Robert K., "Constraints of Thermal Noise on the Effects of Weak 60 Hz Magnetic Fields Acting on Biological Magnetite," in The Proceedings of the National Academy of Sciences, Vol. 91, No. 8 (April 12, 1994). Adair, a Yale physicist, contended that the EMFs created by power transmission lines are far too weak to alter the alignment of magnetite in human brain cells. He conceded, however, that certain home appliances can create fields strong enough to produce this effect, and he did not address most of the other biological effects of weak low-frequency EMFs that have now been documented. Nor did he fully address the growing evidence that certain biological mechanisms may amplify weak 60 Hz signals.

3. See Comments of the U.S. Environmental Protection Agency in ET Docket No. 93-62.

4. Comments of EPA at page 8.

comments are more broadly based. As it turns out, very few parties that do not have a strong financial interest in this proceeding have filed comments. Almost no one has commented on behalf of the medical community or the public at large. This is unfortunate, given the profound implications of this proceeding for public health, and it prompts us to take a broader perspective in these reply comments.

## **II. THE ANSI/IEEE STANDARD FOR CONTROLLED ENVIRONMENTS IS NOT NECESSARILY "SAFE FOR ALL."**

Several commenters, including the National Association of Broadcasters (NAB), the Electromagnetic Energy Policy Alliance (EPPA) and the American Radio Relay League (ARRL) have approvingly quoted the ANSI subcommittee's claim that the more liberal standard for controlled environments is "safe for all."<sup>5</sup> That assertion ignores a vast and growing body of medical literature concerning the effects of *athermal* EMFs. For example, several members of the Bio-Effects Committee of ARRL, in their separate comments in this proceeding, submitted evidence of numerous athermal effects of EMFs, including several different categories of effects that have been documented through research replicated at multiple sites in various countries.<sup>6</sup>

Among other findings, there is now well-documented research showing that EMFs at athermal levels:

- \*affect the rate of calcium transport across cell membranes;

- \*affect the rate of melatonin secretion by the pineal gland;

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5. See, for example, the Comments of the National Association of Broadcasters at page 14, Comments of the American Radio Relay League at page 12, and Comments of the Electromagnetic Energy Policy Alliance at page 9.

6. See Appendix A, attached to the Comments of Members of the ARRL Bio-Effects Committee.

\*reduce the activity of protein kinases, enzymes with important messaging functions in the human body;

\*work together with carcinogenic chemicals to increase the risk of cancer beyond that associated with the chemicals alone; and

\*affect the manner in which cell growth is regulated.<sup>7</sup>

Moreover, the Commission ought not to ignore the cumulative weight of numerous epidemiological studies conducted in many countries which have found excess mortality resulting from certain types of leukemia, lymphoma, breast cancer and brain cancer among persons exposed to EMFs at athermal levels.

It is highly questionable to assert, as EEPA does, that the subcommittee that drafted C95.1-1992 "reflects a more accurate consensus of the scientific community compared with smaller panels of selected experts such as Scientific Committee 53 of the National Council on Radiation Protection and Measurement (NCRP)."<sup>8</sup> In fact, the subcommittee that developed C95.1-1992 was dominated by persons who do not have backgrounds in medicine or the biological sciences. One can search the subcommittee's report in vain for a full review of the large body of recent medical literature that is so vital to an adequate understanding of the health effects of athermal EMFs. Instead, the subcommittee based its conclusions on an analysis of the thermal affects of EMFs on the human body, with little consideration of athermal affects. The subcommittee ignored the growing evidence that low-level EMFs--and transients from pulsed, keyed or modulated signals--have a variety of health effects, even at levels below the standard adopted

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7. The text and references in Appendix A of the Bio-Effects Committee Members' Comments, supra, provide substantial documentation of these and other biological effects of EMFs at athermal levels.

8. See EEPA Comments, supra, at page 1.

by the subcommittee.

It is particularly frustrating when persons who are seemingly unfamiliar with recent medical literature flatly deny the existence of athermal effects--and urge the Commission to adopt standards that ignore important public health considerations.

### **III. "TRANSIENT" EXPOSURES SHOULD BE REGULATED UNDER THE STANDARD FOR UNCONTROLLED ENVIRONMENTS WHENEVER POSSIBLE.**

From a public health standpoint, one of the more troubling proposals advanced by groups representing FCC-licensed services was that the ANSI provision for "transient" exposures should be interpreted quite liberally to cover many instances of public exposure to RF radiation.<sup>9</sup> Several industry groups that took commendably responsible positions about the larger issues raised by this proceeding have been much too cavalier about the health risks of "transient" exposures that may or may not be as fleeting--or harmless--as they might seem.

Some land mobile and remote broadcast pickup facilities subject the public to substantial "transient" exposures. By their nature, these facilities often change their transmitting sites and even their station configurations. And they must often operate in areas that are not only accessible to the public but also very crowded. It is hard to imagine a more *uncontrolled environment* than a dense urban neighborhood during a breaking news event, for example. However, anyone who has covered such a news event knows that some members of the public will loiter there for hours--literally leaning against the barriers that may be installed by public safety officials.

The issue of RF radiation exposure to bystanders near electronic newsgathering

facilities raises difficult public policy questions. The unrestricted coverage of breaking news is clearly in the public interest, but--as NAB points out--there is a significant radius around certain mobile communication facilities where the exposure may exceed the standard for uncontrolled environments.<sup>10</sup> Given the fact that members of the public are so often present in these areas, the Commission must address this problem. If a facility such as a mobile communications van cannot be configured to prevent all public exposure to fields exceeding the standard for uncontrolled environments, at the very least there should be prominent warning signs. Other preventive measures should be required whenever it is feasible. For example, an appropriate area should be cordoned off to keep members of the public away from the main lobe of the transmitted signal from a highly directional VHF, UHF or microwave antenna. Ground-mounted satellite uplink antennas require special precautions that, unfortunately, are sometimes overlooked in the rush to get a facility up and running quickly. NAB said it is primarily the equipment supplier's responsibility to provide guidelines for the safe operation of such facilities, but FCC-licensed end users must also take steps to assure that such guidelines are followed on a daily basis.

There are other sources of "transient" exposure to the public that should not be dismissed as insignificant. NAB and others argued that hikers on a trail leading past a transmitter site and motorists traveling on highways that pass transmitter sites, for example, are exposed to RF radiation so briefly that it is appropriate to regulate exposure to the public from facilities near highways and trails under the standard for controlled

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10. See Comments of NAB, *supra*, at pages 18-19.

environments.<sup>11</sup>

If there is any reason at all to have a standard for exposure to EMFs, this argument is not valid. FCC-licensed transmitter sites are often located on prominent mountaintops or hilltops that offer panoramic views as well as outstanding radio propagation. These are precisely the kinds of places where hikers who have climbed uphill for an extended period of time will stop to look around and perhaps settle down for lunch. It would be unrealistic to suggest that hikers will not linger in some of these places.

At the very minimum, the Commission should not allow exposures exceeding the standard for uncontrolled environments in places accessible to hikers unless there are prominent warning signs that indicate the specific areas hikers should avoid. And such signs must be maintained regularly, given the obvious reality of vandalism in remote locations. The warning signs that one finds near transmitter sites today--if there are any signs at all--are often inadequate to indicate the boundaries of the hazard zones.

The question of RF radiation in excess of the standard for uncontrolled environments along public streets and highways poses an even more difficult problem. Perhaps warning signs may be adequate to protect hikers on remote mountaintops, but that is not sufficient to protect motorists along public roads. While motorists may not ordinarily stop just outside the fences surrounding most FCC-licensed facilities, what about persons who experience mechanical difficulties with their cars? Can FCC licensees really prevent such persons from stopping and remaining in areas where the exposure exceeds the standard for uncontrolled environments? Would warning signs do any good in this instance? The only rule the Commission can adopt that adequately protects

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11. See Comments of NAB, supra, at page 18. NAB agrees that the EMFs from a licensed facility should not exceed the standard for uncontrolled environments at a campground, school or private residence. However, NAB contends that it is acceptable to expose persons using a trail or highway to stronger EMFs.

public safety is a requirement that the exposure level not exceed the standard for uncontrolled environments anywhere outside the secured premises of the licensed facility if a public road is nearby.

#### **IV. AMATEUR RADIO SHOULD NOT BE CATEGORICALLY EXEMPT.**

Turning now to the amateur radio service, it is imperative that the Commission not default in its responsibility to assure that amateur licensees do not jeopardize the health and safety of their families and neighbors--or even their own health and safety. Educational efforts by amateur radio organizations--no matter how aggressive and well-intentioned--are not enough to assure compliance with C95.1--or whatever standard the Commission may ultimately adopt.

While all commenters in this proceeding agree that most amateur radio activities do not result in exposures that exceed the standard for controlled environments, there are a number of amateur radio activities that can expose amateur operators, their families and neighbors to fields exceeding the standard for uncontrolled environments--and at times, even the standard for controlled environments. Perhaps the areas of greatest concern are high-power amateur VHF-UHF activity, vehicular mobile operation with amplifiers in the 100-200 watt range, the widespread use of hand-held transceivers and the explosive growth in the use of indoor or other hidden antennas by amateurs who are prohibited to have outdoor antennas.

No commenter has challenged our statement that there are hundreds of amateurs now engaged in "moonbounce" (earth-moon-earth, or e.m.e.) communication. These stations often utilize the maximum permissible transmitter power, accompanied by antennas having a power gain in excess of 23 dB. over a dipole in the 144 MHz band,



with even higher antenna gains on higher frequency amateur bands. That can result in an effective radiated power in excess of 200,000 watts--from an amateur radio station located in a residential neighborhood.<sup>12</sup> These stations sometimes point their antennas at the horizon to take advantage of ground gain, which enhances their signal strength at moonrise and moonset--but may also place nearby homes in strong RF fields.

No one can deny that this type of activity has the potential to expose persons who are unaware of the hazard to RF radiation exceeding even the ANSI standard for controlled environments. Moreover, other types of "weak-signal DX" operation also have the potential to expose members of the public to fields exceeding C95.1-1992, as the Commission and EPA confirmed in their own survey of the fields associated with amateur radio stations.<sup>13</sup> Several thousand U.S. amateurs<sup>14</sup> utilize high power in the VHF-UHF region, in combination with high-gain antennas, for long-distance communication by such modes as tropospheric scatter, meteor scatter and aurora as well as e.m.e.

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12. Several brands of commercial Yagi antennas for the 144 MHz band achieve approximately 15 dB. of forward gain over a dipole, and e.m.e. arrays on that band often utilize eight or more bays of these antennas in phased arrays. Allowing for normal feedline losses, a gain of 23 dB. over a dipole is readily attainable. In fact, several of the best-known e.m.e. stations utilize 32- or 48-bay arrays having a forward gain approaching 30 dB. over a dipole, coupled with the maximum permissible transmitter power output.

13. See Cleveland, Robert F., E.D. Mantiply and T.L. West, "Measurements of Environmental Electromagnetic Fields Created by Amateur Radio Stations," presented at the 13th annual meeting of the Bioelectromagnetics Society, Salt Lake City, Utah, June, 1991. This field survey revealed that the author's own portable VHF-UHF station, housed in a van with directional Yagi antennas mounted on the rear bumper, produced fields of more than three times the 1992 ANSI standard for uncontrolled environments at ground level about 20 feet in front of the antenna.

14. There is no official count of the number of amateur radio stations actively engaged in high-power VHF-UHF operation (nor could there be, given the informal nature of this activity). However, one amateur sells a privately published directory of 1,800 amateurs who are active "weak signal DXers" on the VHF-UHF amateur bands, predominantly in the central and western states. This publication was announced in The West Coast VHFer (a newsletter for weak signal DXers), March, 1994, at page 2. The same issue of this newsletter also noted that two of the best-known 144 MHz moonbounce operators have each contacted more than 1,000 other stations via e.m.e. on that one amateur band, while three prominent 432 MHz moonbounce operators have each contacted more than 500 stations on that band. While there is some overlap in these lists, this indicates that a large number of amateurs have stations capable of producing substantial EMFs.

In addition, thousands more amateur operators use amplifiers in the 100-200 watt range in VHF mobile service. No one denies that such an installation produces EMFs exceeding the standard for uncontrolled environments in areas accessible to the general public. There is, as NAB conceded concerning commercial mobile installations utilizing similar power levels and antenna configurations, a potential hazard zone with a radius of up to seven feet at 450 MHz.<sup>15</sup> These solid-state amplifiers for VHF mobile use, which require only a 12-volt DC power source, are featured in the catalogs of all major amateur equipment retailers--usually without any warnings about the hazards that they may pose!

Similarly, amateur radio hand-held transceivers--contrary to the claims of EEPA--are not ordinarily placarded with any warning about the health hazard that they may pose.<sup>16</sup> Nor does the typical instruction manual contain any prominent warning that these units, when used exactly as intended, may expose the user to RF radiation exceeding the new ANSI standard for uncontrolled environments. All hand-held transceivers with power outputs exceeding the ANSI threshold of 1.4 watts should be required to have prominent warnings (mounted on the unit itself) about the probable hazards associated with their use.

Another radiation safety hazard has been created by the recent growth in the use of indoor and other hidden antennas by amateurs who cannot erect outdoor antennas. All leading amateur radio magazines now carry advertisements for small loop antennas that are intended for use indoors or on balconies by amateurs who live in places where outdoor antennas are not permitted. One such loop antenna is housed in a box with a

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15. See Comments of NAB, supra, at page 19. At 144 MHz, the most popular amateur band for vehicular mobile operation, the radius is even greater.

16. See Comments of EEPA, supra, at page 2.

handle so it can be checked as luggage on an airliner; the advertising copy reads, "When you get there, set it (the antenna) on a table or desk and enjoy ragchewing or DXing!"<sup>17</sup> Full-page advertisements for these miniature antennas appear almost monthly in virtually every amateur radio magazine; many thousands of amateur licensees must now be using such antennas on a regular basis.

Given all of these considerations, it would be inappropriate for the Commission to again exempt the amateur service from all requirements for compliance with radiation safety guidelines. Education alone is not enough. Granted, ARRL and other amateur radio publishers often disseminate information about RF safety matters. Indeed, this author published an article on this subject in the current issue of QST, the official magazine of ARRL. However, vast numbers of amateurs--especially newcomers who hold the no-code technician license--are neither members of ARRL nor subscribers to any other amateur radio magazine. In fact, if one compares amateur licensing statistics with ARRL membership statistics, it becomes apparent that only a small percentage of newly licensed amateurs is joining ARRL.<sup>18</sup> While there are other national organizations for amateur radio operators, none of them appears to be attracting the majority of the new licensees, either. Education alone cannot work if a large percentage of radio amateurs neither read the publications nor join the organizations that endeavor to educate them.

In addition, not all of the information appearing in amateur radio magazines would encourage safe operating practices. As noted in the author's original comments in this

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17. This language is in an advertisement for a "Box Fan Portable Loop" by MFJ Enterprises, which appears on page 145 of QST for April, 1994, and also in several other amateur radio publications.

18. During the last five years (1988-1993), the number of licensed radio amateurs in the U.S. has increased by approximately 150,000 (from about 480,000 to 631,000), while ARRL's membership increased by about 15,000 (from about 156,000 to 171,000, including foreign members and associate members who do not hold U.S. amateur licenses).

proceeding, amateur radio magazines sometimes publish articles, photographs and advertisements that encourage questionable practices, such as operating a high-power VHF station outdoors with an antenna a few feet above the operator's head. One such photograph on the front cover of QST can offset many words about radiation safety inside the magazine.<sup>19</sup> QST recently carried an article about amateur satellite communications using high-gain VHF antennas in a bedroom of an apartment.<sup>20</sup> The accompanying photograph showed the antenna pointed toward a wall that was apparently shared by an adjoining apartment, only a few feet away. While there was a warning about "Potential RF Hazards" accompanying the continuation of the article, it would be easy to read most of the article and overlook the warning. In our view, even publishing such an article in a section of a magazine intended for newly licensed amateurs (which is where this one appeared) sends the wrong message to newcomers.

Virtually all commenters on the amateur radio aspects of this proceeding have said that the kind of environmental processing required of many other FCC licensees is impractical for the amateur service. Given that there are now more than 630,000 amateur licensees, that point can hardly be argued. However, the ARRL Bio-Effects Committee Members suggested that the Commission could add language to Part 97 of its rules requiring amateurs to comply with the exposure limits for uncontrolled environments contained in C95.1-1992 (or whatever standard the Commission may choose to adopt).<sup>21</sup>

It is noteworthy that even the Electromagnetic Energy Policy Alliance--not an

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19. See Comments of Wayne Overbeck at page 3-4.

20. Schillemann, Dieter, "PACSATs from an Apartment," QST, Vol. 78, No. 3 (March 94).

21. Comments of Members of the ARRL Bio-Effects Committee at page 5.

organization known for advocating excessively strict limits on RF exposure--has gone on record in this proceeding in favor of adopting the ANSI standard for uncontrolled environments for "any transmitters and facilities that are located in residential areas or locations with unrestricted access," a category that would include most amateur radio stations.<sup>22</sup>

Perhaps an good way for the Commission to assist in the process of educating amateurs about RF safety is not only to place regulations requiring compliance in Part 97 but also to promulgate an amateur version of the excellent document now used by broadcast licensees, OST Bulletin No. 65. The Commission could include in such a brochure charts and tables showing required separation distances between antennas and inhabited areas for each amateur band and each major antenna type, with transmitter power levels of 10 watts, 100 watts and 1000 watts, for example. The broadcast industry has already prepared a draft of a new version of Bulletin No. 65; we would be happy to assist in the preparation of a similar but simplified bulletin for the amateur service.

Given the amateur radio service's long tradition of voluntary self-regulation, there is every reason to believe that most amateurs will voluntarily comply with the FCC's guidelines to limit exposure to RF radiation. We do not anticipate the need in amateur radio for anything like the broadcast industry's "three-pronged" approach to compliance certification. Rather, amateurs would be expected to follow simple, clearly stated guidelines for maintaining required separation distances between their antennas and inhabited areas. At most, amateurs might be asked to certify on their application forms that they have read and will adhere to the guidelines for antenna placement.

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22. See Comments of EEPA, supra, at page 2.

## **V. THE COMMENTS OF ARRL DO NOT REFLECT THE VIEWS OF ITS BIO-EFFECTS COMMITTEE.**

Something must be said in these reply comments of the disturbing sequence of events that led to the filing of separate comments in this proceeding by ARRL and by members of the ARRL Bio-Effects Committee. This difficult problem arose when the ARRL Board of Directors determined ARRL's position on this issue unilaterally, without soliciting input from its own committee of experts or the membership at large.<sup>23</sup>

When members of the Bio-Effects Committee learned that the Board had adopted a position on this matter under these circumstances, they prepared an unsolicited statement of their views and submitted it to the Board of Directors. While the ARRL staff acknowledged having received this statement, no one at the board or staff level offered to engage members of the Bio-Effects Committee in any substantive dialogue about the differences between the board's position and the committee's. And those differences were major. While the board took the position that amateur radio should be categorically exempt from compliance with any FCC-adopted radiation safety standard, the committee disagreed. While the board declared that there is a 50-fold safety factor built into the ANSI standard for uncontrolled environments (a standard which ARRL dismissed as "completely and utterly specious"),<sup>24</sup> the committee said that this standard is *inadequate* to protect public health because it ignores the effects of modulation, among its other shortcomings. And while the committee said the standard for uncontrolled environments was the absolute minimum that the Commission should consider adopting to protect

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23. Prior to adopting its position in this proceeding, ARRL published two brief, factual announcements of the proceeding in QST (May, 1993, page 90 and June, 1993, page 20). Neither item solicited member input.

24. See Comments of ARRL, *supra*, at page 12.

radio amateurs, their families and neighbors, the board took the position that if amateur radio is to be regulated for radiation safety at all, it should be under the standard for controlled environments. The board did not indicate how the families and neighbors of radio amateurs could be informed--and their voluntary consent obtained--for exposures exceeding the limits allowed in uncontrolled environments, as would be required if amateur radio operations are to fit within the ANSI definition of a controlled environment.

After the board learned that members of the Bio-Effects Committee had filed formal comments in this proceeding, a period of demands and recriminations occurred. Representatives of the board first demanded that the members of the Bio-Effects Committee sign a statement--to be attached to ARRL's reply comments in this proceeding--intended to soften the disagreement between the board and the Bio-Effects Committee. In the same e-mail message from a senior ARRL official that outlined what such a statement should say, committee members were also told not to file reply comments in this proceeding. When it became apparent that most committee members were unwilling to comply, one committee member was summarily dismissed and the others who had signed the committee members' separate comments were sent letters chastising them for doing so.

This sequence of events would suggest that in the board's view, the Bio-Effects Committee exists not to provide expert advice to the board but instead to lend credibility to whatever position the board chooses to adopt. The ARRL comments in this proceeding provide a good illustration of ARRL's failure to utilize the expertise of the Bio-Effects Committee. In its comments, ARRL professed ignorance of the NCRP standard as an alternative to C95.1-1992 by declaring, "Whether or not that standard (NCRP) is suitable

is not presently known by the League..."<sup>25</sup> In fact, a member of the ARRL Bio-Effects Committee played a major role in developing the NCRP standard and is intimately familiar with its details. If ARRL is unfamiliar with the NCRP standard, it is only because ARRL has not consulted its own experts.

Much is at stake in the Commission's determination of what radiation safety standards, if any, will apply to the amateur radio service. Given all of foregoing circumstances, the Commission should carefully consider the comments of those with expertise in this area in deciding the important public policy questions inherent in this proceeding.

## **CONCLUSION**

In one of his early speeches addressing communications policy issues, FCC Chairman Reed Hundt reaffirmed the Commission's legitimate role in safeguarding public health and safety.<sup>26</sup> While his primary focus was the Commission's possible role in limiting violence in the electronic media, Chairman Hundt also spoke of the folly of industry groups taking the path of denial in addressing safety issues. He reportedly cited the error of the automotive industry's posture in the 1960s when Ralph Nader published his book, Unsafe at Any Speed.

Industry groups often err by taking the path of denial. It can hardly be argued that the tobacco industry has gained credibility by its posture in the debate over cigarette smoking and health. Nor have motorcycle riders' groups gained credibility by their dogged opposition to helmet laws in the face of overwhelming evidence that helmets

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<sup>25</sup> Comments of ARRL at page 6.

<sup>26</sup> As reported in the trade press, Chairman Hundt made these remarks on Jan. 24, 1994, at a joint session of three broadcast industry associations: INTV, NATPE and MSTV.



reduce motorcycle deaths and injuries.

To their credit, most FCC-licensed communications industries have learned from the mistakes of others. Few of the commenters in this proceeding have argued for categorical exemptions from regulations intended to protect the public from RF radiation hazards. However, many of them have asked for exceptions that could compromise public health in significant ways. We can only urge the Commission to deny as many of those exceptions as possible. And in regard to the amateur radio service, we regret that ARRL has chosen to seek a categorical exemption in spite of irrefutable evidence that some amateurs engage in operating activities that expose amateur operators, their families and neighbors to EMFs that exceed even the ANSI standard for controlled environments. The public interest will be better served if the Commission ends the categorical exemption of amateur radio and adopts reasonable RF safety rules for the amateur service, accompanied by a suitable guidebook to assist amateurs in pursuing their hobby safely.

Respectfully submitted,



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April 22, 1994

## **CERTIFICATE OF SERVICE**

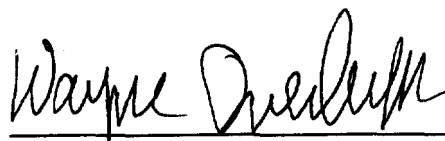
I, Wayne Overbeck, certify that on this 22nd day of April, 1994, I caused copies of the foregoing reply comments to be mailed first class, postage prepaid, to the following:

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